Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603724N *I Navy Energy Program*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	600.313	79.401	72.214	60.610	-	60.610	49.511	47.446	48.088	49.104	Continuing	Continuing
0829: *Afloat Energy Technology*	67.639	13.951	21.131	16.804	-	16.804	12.899	12.686	12.664	12.929	Continuing	Continuing
0838: *Mobility Fuels (ADV)*	131.748	7.339	6.491	8.419	-	8.419	8.330	8.017	8.180	8.354	Continuing	Continuing
0928: *Shore Energy Technology*	60.931	1.967	2.059	2.133	-	2.133	2.176	2.221	2.266	2.313	Continuing	Continuing
0996: *Aircraft Energy Technology*	184.506	21.748	30.419	21.587	-	21.587	17.554	17.430	17.295	17.663	Continuing	Continuing
2566: *Battery Development and Safety*	4.290	12.219	12.114	11.667	-	11.667	8.552	7.092	7.683	7.845	Continuing	Continuing
3270: *Sec. 2912 Operational Energy Savings*	0.000	7.700	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.700
9999: *Congressional Adds*	151.199	14.477	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	165.676

A. Mission Description and Budget Item Justification

This program supports projects to evaluate, adapt, and demonstrate energy related technologies for Navy aircraft and ship operations to: (a) increase fuel-related weapons systems capabilities such as range and time on station; (b) reduce energy costs; (c) apply energy technologies that improve environmental compliance; (d) examine restrictive fuel specification requirements to reduce cost and increase availability worldwide; (e) provide guidance to fleet operators for the safe use of commercial grade or off-specification fuels; and (f) make needed periodic changes to fuel specifications to ensure fuel quality and avoid fleet operating problems. This program supports the achievement of legislated, White House, Department of Defense, and Navy energy management goals.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy	Date: March 2024
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603724N *I Navy Energy Program*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	75.320	72.214	61.256	-	61.256
Current President's Budget	79.401	72.214	60.610	-	60.610
Total Adjustments	4.081	0.000	-0.646	-	-0.646
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	5.700	0.000			
• SBIR/STTR Transfer	-1.619	0.000			
• Program Adjustments	0.000	0.000	-0.325	-	-0.325
• Rate/Misc Adjustments	0.000	0.000	-0.321	-	-0.321

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 9999: *Congressional Adds*		
Congressional Add: *Marine energy systems for sensors and microgrids*	9.654	0.000
Congressional Add: *Navy energy systems*	4.823	0.000
Congressional Add Subtotals for Project: 9999	14.477	0.000
Congressional Add Totals for all Projects	14.477	0.000

Change Summary Explanation

Funding: Overall PE decrease ($0.646 million)
Project Changes:
0829: Increase of $1.300 million for the Gas Turbine Material Upgrade Future Naval Capability Transition Program.
0996: Decrease of $1.200 million for Programmatic adjustments.
Multiple Projects: Decrease of $0.746 million for Rate/Misc Adjustments.

Schedule: Not Applicable
Technical: Not Applicable

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*				Project (Number/Name) 0829 / *Afloat Energy Technology*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
0829: *Afloat Energy Technology*	67.639	13.951	21.131	16.804	-	16.804	12.899	12.686	12.664	12.929	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project is designed to enhance lethality, resilience, reach, and sustainment of warfare systems through more effective generation, use and distribution of energy on existing and future surface fleet assets, including Unmanned Surface Vessels (USVs), by developing and transitioning energy and maintenance improvements. This project, managed through NAVSEA 05T, will identify, promising energy related technologies through involvement with Fleet representatives, Life-Cycle Managers (LCMs), NAVSEA Technical Warrant Holders, In-Service Engineering Agents (ISEAs), the Navy Shipbuilding Research Program (NSRP), PEOs, Industry, and Academia. The project directly supports Department of Navy goals for agility, resilient force posture, and innovation by maximizing energy to increase operational capability (e.g., extend range, increase time on station, enable high power combat systems). Potential technology areas include Power Generation and Storage (PG&S), Hull Hydrodynamics (HH), Underwater Hull Husbandry (UHH), Heating, Ventilation & Air Conditioning (HVAC) Systems, Thermal Management (TM), Main Propulsion Systems (MP), Electrical Systems (EL), Auxiliary Systems (AUX) and Energy Monitoring, Planning, and Assessment (EMP&A). Promising energy related projects that improve the effective use, conversion, storage, distribution, and control of energy to enable the integration with future weapons and sensors onto platforms are proposed each FY for evaluation. Projects are selected based on technical review and business case analysis. Not all proposals are pursued, and funding changes between functional categories or fiscal years may occur based on fleet needs, technology maturity level, ship schedule changes, or other factors.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Power Generation and Storage Sub Project	4.000	0.546	2.160	0.000	2.160
Articles:	-	-	-	-	-
Description: This project area will accomplish prototype development, laboratory and Fleet testing to determine overall effectiveness of technologies focused on improving efficiency of current power generation & storage methodologies.					
FY 2024 Plans: FY24 funding will produce the design and control basis (Hardware & Software) for dissimilar power resources and will consider the use of paralleled power generation and energy storage interface as a dynamic source and load, with energy storage being able to be dispatched as necessary according to weapon system load requirements. Funding will also continue prototyping & land based testing a 1500 Volt Amp (VA) Uninterrupted Power Supply (UPS) using Lithium Iron Phosphate batteries, which will offer a 2x increase in operational life and reduce life cycle costs on most surface ship applications. This effort will complete in FY24 with an analysis of the findings from the shipboard demonstration.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0829 / *Afloat Energy Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
In addition, continue to identify other energy saving/capability improvement technologies in Power Generation & Storage and prepare proposals and business case analyses for promising technologies, with potential to reduce fuel demand and increase capability through increased time on station and/or enabling future combat system advancements. ***FY 2025 Base Plans:*** FY25 funding will extend research and development of an ONR gas turbine advanced materials project for high temperature and high-pressure operations. New coating/material combinations will be validated at element and engine level with requisite production engineering completed for transition to engine component improvement program and/or configuration managed design baseline. Also, FY25 funding may be used to continue testing and ship integration of a hydrogen enhanced combustion system for diesel engines. In addition, continue to identify other energy saving/capability improvement technologies in Power Generation & Storage and prepare proposals and business case analyses for promising technologies, with potential to reduce fuel demand and increase capability through increased time on station and/or enabling future combat system advancements. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 increase ($1.614M) is due to addition of gas turbine advanced materials project and hydrogen enhanced combustion work.					
Title: Hull Hydrodynamic Sub Project	0.222	2.466	1.904	0.000	1.904
Articles:	-	-	-	-	-
Description: This project area will accomplish prototype development, modeling, laboratory and Fleet testing of ship modifications to propellers and/or hull appendages to determine overall mission, energy, and cost effectiveness of these improvements. ***FY 2024 Plans:*** Energy savings of appropriately designed Hydrodynamic Hull Appendages (HHA) is well documented; however, the government does not have robust methods to specify or validate contractors' Computational Fluid Dynamics (CFD) analysis of HHAs performance. A study will be conducted by utilizing existing HHA model-scale testing data as a validation for CFD/Fluid Flow analysis methods to determine input and modeling requirements to					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0829 / *Afloat Energy Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
accurately predict appendage performance. Parametric studies will then be conducted to determine/verify the ability of CFD/Fluid Flow analysis to predict data trends and provide optimized results. Study results will be used to develop updates to DDS-051 design guidance and develop a Data Item Description (DID) to support ship design during acquisition. In addition, fluid dynamics and other advanced analytical capabilities will be used to explore more efficient hull designs for future surface combatants. Continue to identify other energy saving/capability improvement technologies in Hull Hydrodynamics and prepare proposals and business case analyses for promising technologies with potential to reduce fuel demand and increase capability through increased time on station. ***FY 2025 Base Plans:*** Complete the third year of a study of hull hydrodynamic appendages using CFD/Fluid Flow analysis methods to determine input and modeling requirements to accurately predict appendage performance. Study results will be used to develop updates to DDS-051 design guidance and develop a Data Item Description (DID) to support ship design during acquisition. In addition, fluid dynamics and other advanced analytical capabilities will be used to explore more efficient hull designs for future surface combatants. Leveraging a study from FY24, continue a new sonar dome design and ship integration effort that focuses on hydrodynamic efficiency and reducing hull resistance while maintaining sonar performance. A new navy lead sonar dome design could be incorporated into the DDG-X or other future navy surface combatants with a sonar requirement. Lastly, perform system engineering analyses of proposed hull hydrodynamic appendages (HHA) to determine impact on fuel consumption (operational energy) and integration feasibility for US Navy Ships, in support of SBIR Topic N231-052. This project will provide government analyses (Design Verification and Design Validation) of the proposed HHAs and document Return on Investment (RoI) potential. Once completed, the aforementioned SBIR will develop a full-scale prototype of an advanced, reliable, wide-range HHA for Navy use within the next 24 months. This funding will provide government lead system integration, analyses, and document estimated performance. Continue to identify other energy saving/capability improvement technologies in Hull Hydrodynamics and prepare proposals and business case analyses for promising technologies with potential to reduce fuel demand and increase capability through increased time on station. ***FY 2025 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0829 / *Afloat Energy Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 decrease ($0.562M) is due to the ramping down of funding for the HHA CFD project.					
Title: Underwater Hull Husbandry Sub Project	0.906	0.602	0.874	0.000	0.874
Articles:	-	-	-	-	-
Description: Project funds will be utilized to identify and evaluate new underwater hull/propeller coating systems and underwater hull cleaning and maintenance techniques to reduce hydrodynamic drag on the hull and thereby increase fuel efficiency. ***FY 2024 Plans:*** Complete the Hull Biofouling Decision Making Tool with user interface and manual for evaluating or estimating the effects of hull biofouling on ship powering condition and fuel use. This desktop tool will employ simple computational approaches combined with ship operational data that will allow for decision making for hull maintenance, evaluation of new biofouling control technologies or strategies, and potentially for ship design, based on expected resistance and fuel use due to the presence of hull biofouling. Continue to identify other energy saving/capability improvement technologies in Underwater Hull Husbandry and prepare proposals and business case analyses for promising technologies with potential to reduce fuel demand and increase capability through increased time on station. ***FY 2025 Base Plans:*** Extend the previously funded Hull Biofouling Decision Making Tool by incorporating propeller biofouling analysis and decision aids. This desktop tool will employ simple computational approaches combined with ship operational data that will allow for decision making for hull maintenance, evaluation of new biofouling control technologies or strategies, and potentially for ship design, based on expected resistance and fuel use due to the presence of hull biofouling. In addition, FY 25 funds will be used to complete a study analyzing the performance of biofouling coatings as a function of age and determine if applying thicker coating during installation would result of greater vessel efficiency and therefore cost savings during the tail end of a dry docking cycle. If so, hull coating specifications and standards will be updated to reflect the new coating thickness requirement.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0829 / *Afloat Energy Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Continue to identify other energy saving/capability improvement technologies in Underwater Hull Husbandry and prepare proposals and business case analyses for promising technologies with potential to reduce fuel demand and increase capability through increased time on station. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 increase ($0.272M) supports a study to analyze performance of biofouling coatings as a function of age.					
Title: Heating, Ventilation and Air Conditioning (HVAC) Sub Project	0.772	0.605	0.565	0.000	0.565
Articles:	-	-	-	-	-
Description: Project funds will be utilized to accomplish prototype development, land and shipboard testing of improvements aimed at more efficient climate control of shipboard spaces. ***FY 2024 Plans:*** Advanced Thermal Insulation for shipboard use will be researched, developed and tested for viability on naval ships. Market research will be conducted for commercially available products, a cost benefit analysis will be performed on various candidates, and procurement specifications will be drafted. Continue to identify other energy saving/capability improvement technologies in HVAC and prepare proposals and business case analyses for promising technologies with potential to reduce fuel demand and increase capability through increased time on station and/or enabling future combat system advancements. ***FY 2025 Base Plans:*** Leveraging an ongoing SBIR topic (N221-054), this task will fund a government technical expert to oversee and work with one or more small business to develop, integrate, and transition a modernized advanced fan coil assembly. The work includes analyzing performance of the prototypes compared to requirements, developing business case analysis, facilitating a shipboard demonstration/prototype, and documenting transition paths and specification updates. This project will result in a comprehensive integration plan that will serve as a portfolio for the Technology Insertion Development documentation necessary for successful transition of the Modernized Fan Coil Assembly to the Fleet. Continue to identify other energy saving/capability improvement technologies in HVAC and prepare proposals and business					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0829 / *Afloat Energy Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
case analyses for promising technologies with potential to reduce fuel demand and increase capability through increased time on station and/or enabling future combat system advancements. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 decrease ($0.040M) is due to a lower cost for modernized fan coil assembly project.					
Title: Thermal Management Sub Project	0.222	1.996	1.446	0.000	1.446
Articles:	-	-	-	-	-
Description: Project funds will be utilized to identify and evaluate potential uses for Thermal Management techniques designed to reduce overall shipboard heat generation as well as incorporating waste heat recovery techniques to reduce the shipboard electrical demand on HVAC and other systems. ***FY 2024 Plans:*** Explore shipboard technologies or techniques that could be used to cool high power combat systems with very short during power draws and significant cooling needs. Also investigate waste heat recovery technologies that could produce additional electrical power for the ship using waste heat from prime movers or other large heat sources. Continue to identify other energy saving/capability improvement technologies in Thermal Management and prepare proposals and business case analyses for promising technologies with potential to reduce fuel demand and increase capability through increased time on station and/or enabling future combat system advancements. ***FY 2025 Base Plans:*** Continue effort to explore shipboard technologies or techniques that could be used to cool high power combat systems. Specific focus will be on demonstrating a waste heat recovery technology that could produce additional cooling for the ship using waste heat from prime movers or other large heat sources. The demonstration will use a 31 ton absorption chiller installed on a Department of Transportation MARAD Training Ship as a proof of concept for USN ships with similar machinery arrangements.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0829 / *Afloat Energy Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Continue to identify other energy saving/capability improvement technologies in Thermal Management and prepare proposals and business case analyses for promising technologies with potential to reduce fuel demand and increase capability through increased time on station and/or enabling future combat system advancements. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 decrease ($0.550M) is due to ramping down of shipboard cooling technology exploration and demonstration efforts.					
Title: Main Propulsion Systems Sub Project	5.057	4.012	1.701	0.000	1.701
Articles:	-	-	-	-	-
Description: Project funds will be utilized to identify requirements and perform land based and at sea testing of surface ship and Unmanned Surface Vessel (USV) propulsion system improvements on Gas Turbine, Steam, and Diesel Engine systems to reduce overall fuel consumption and lower maintenance costs. ***FY 2024 Plans:*** Continue efforts for LM2500 Gas Turbine Fuel Efficiency Concepts. Gas turbine compressor fouling reduces engine efficiency and increases fuel demand and this project will obtain an engine set of "Super Polished" compressor airfoils to test and document the potential efficiency gains by using highly polished airfoils. Additionally, this funding aims to adjust the cooling to the high-pressure turbine (HPT) in order to reduce fuel consumption at the same power output levels. Continue to identify other energy saving/capability improvement technologies in Propulsion Systems and prepare proposals and business case analyses for promising technologies, with potential to reduce fuel demand and increase capability through increased time on station. ***FY 2025 Base Plans:*** Continue efforts for LM2500 Gas Turbine Fuel Efficiency Concepts. Gas turbine compressor fouling reduces engine efficiency and increases fuel demand and this project will obtain an engine set of "Super Polished" compressor airfoils to test and document the potential efficiency gains by using highly polished airfoils. Additionally, this funding aims to adjust the cooling to the high-pressure turbine (HPT) in order to reduce fuel consumption at the same power output levels. Lastly, the vendor will design and test an improved nozzle design to improve fuel efficiency. The vendor testing will be completed in FY25 and the government subject matter experts will provide a final report of findings from tests.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0829 / *Afloat Energy Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Continue to identify other energy saving/capability improvement technologies in Propulsion Systems and prepare proposals and business case analyses for promising technologies, with potential to reduce fuel demand and increase capability through increased time on station. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 decrease ($2.311M) is due to reduced costs in year 3 of the LM2500 Gas Turbine Fuel Efficiency Concepts project as the test and evaluation portion of the project ramps down.					
Title: Electrical Systems Sub Project	0.902	1.466	0.915	0.000	0.915
Articles:	-	-	-	-	-
Description: Project funds will be utilized to identify and perform land based and shipboard testing of ship electrical system improvements to optimize power and energy use. ***FY 2024 Plans:*** Existing Non-Intrusive Load Monitoring (NILM) sensors are stand-alone and lack network connection requiring ship visits to remove data sets. FY 24 funding will develop a Concept of Operations Plan (CONOP), architectures and Interface Design Document (IDD) for NILM and existing data acquisition systems on navy ships. Objective is to develop a functional system prototype for NILM integration into CANES and into eRM and install shipboard as a proof-of-concept test. Continue to identify other energy saving/capability improvement technologies in Electrical Systems and prepare proposals and business case analyses for promising technologies with potential to reduce fuel demand and increase capability through increased time on station and/or enable future combat system enhancements. ***FY 2025 Base Plans:*** Existing Non-Intrusive Load Monitoring (NILM) sensors lack network connection requiring ship visits to remove data sets. FY 25 funding will continue developing the Concept of Operations Plan (CONOP), architectures and Interface Design Document (IDD) for NILM and existing data acquisition systems on navy ships. Development will also include improving sensor accuracy and a new data analytics library and capability.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0829 / *Afloat Energy Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Continue to identify other energy saving/capability improvement technologies in Electrical Systems and prepare proposals and business case analyses for promising technologies with potential to reduce fuel demand and increase capability through increased time on station and/or enable future combat system enhancements. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 decrease ($0.551M) is due to ramping down of NILM sensor development and integration efforts.					
Title: Auxiliary Systems Sub Project ***Articles:*** ***Description:*** Project funds will be utilized to identify, test and evaluate new technologies for shipboard auxiliary systems aimed at reducing fuel consumption. ***FY 2024 Plans:*** Continue to identify additional energy saving/capability improvement technologies in auxiliary systems and prepare proposals and business case analyses for promising technologies, with potential to reduce fuel demand and increase capability through increased time on station and/or enable future combat system enhancements. ***FY 2025 Base Plans:*** Continue to identify additional energy saving/capability improvement technologies in auxiliary systems and prepare proposals and business case analyses for promising technologies, with potential to reduce fuel demand and increase capability through increased time on station and/or enable future combat system enhancements. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 decrease ($0.001M) is due to reduced program costs towards evaluating new technologies in this focus area.	0.222 -	0.316 -	0.315 -	0.000 -	0.315 -
Title: Energy Monitoring, Planning & Assessment ***Articles:*** ***Description:*** This project area will focus on methods of capturing and displaying energy related data to shipboard personnel as actionable information for ships force to employ energy conservation measures	1.648 -	9.122 -	6.924 -	0.000 -	6.924 -

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
underway and in port as mission requirements permit. Through projects like GENISYS, it also supports Naval Operational Architecture/Joint All-Domain Command and Control. ***FY 2024 Plans:*** Continue GENISYS software development lifecycle (SDLC) efforts for developing USFF Requirements Management Board capabilities and shipboard evaluation including implementation of critical updates based on user feedback and integration with enterprise Remote Monitoring (eRM) and other fuel related navy enterprise applications. Continue expanding GENISYS capability to the LPD-17 class and exploring feasibility of a cross security domain solution. Initiate planning efforts to remove previously installed TRITON system on DDG 102 for test and evaluation. Conduct a shipboard demonstration of an emission's monitoring system in the exhaust stack of a gas turbine in order to monitor emissions but also utilize the information to determine if power generation and propulsion systems are operating efficiently or require maintenance. Develop new shipboard power and energy curricula for USN personnel and navy engineers. Initiate efforts to pilot a commercial energy technology demonstration on a MARAD training vessel to show the efficiency and cost savings associated with this approach as compared to traditional navy shipboard prototyping. Begin a multi-year effort to improve enterprise-wide energy monitoring and visibility. This includes developing the capability to conduct thorough and effective energy supportability analysis in support of the energy key performance parameters, improving the theater energy modeling work that was started under previous efforts, and expanding on the existing coordination of efforts across the various fuel logistics, decarbonization working groups, and fleet energy monitoring programs throughout the USN and USMC. Continue to identify other energy capability improvement technologies and monitoring methodologies and prepare proposals and business case analyses for promising technologies, with potential to reduce fuel demand and increase capability through increased time on station and/or enable future combat system enhancements. ***FY 2025 Base Plans:*** Continue GENISYS software development lifecycle (SDLC) efforts for developing USFF Requirements Management Board capabilities and implementation of critical updates based on user feedback and on					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
integration with enterprise Remote Monitoring (eRM) and other fuel related navy enterprise applications. Expand the data analytics capability of the Fleet Energy Conservation Dashboard using all available shipboard power, energy, and operation data. Complete expansion of GENISYS capability to the LPD-17 class. Continue evaluation of a shipboard demonstration of an emission's monitoring system in the exhaust stack of a gas turbine in order to monitor emissions but also utilize the information to determine if power generation and propulsion systems are operating efficiently or require maintenance. Continue the development of new shipboard power and energy curricula for USN personnel and navy engineers. Curricula focuses on strengthening warfighter competencies, such as fuels management, power generation and distribution, energy storage solutions and energy command and control. Curricula will highlight mobility/lethality, operational resilience, supply chain management, command and control and multi-domain operations. Continue the effort to improve enterprise-wide energy monitoring and visibility. This includes developing the capability to conduct thorough and effective energy supportability analysis in support of the energy key performance parameters, improving the theater energy modeling work that was started under previous efforts, and expanding on the existing coordination of efforts across the various fuel logistics, decarbonization working groups, and fleet energy monitoring programs throughout the USN and USMC. Continue to identify other energy capability improvement technologies and monitoring methodologies and prepare proposals and business case analyses for promising technologies, with potential to reduce fuel demand and increase capability through increased time on station and/or enable future combat system enhancements. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 decrease ($2.198M) is due to ramping down of engine emission demonstration project and reduction in scope of the initial efforts to pilot a commercial energy technology demonstration on a training vessel.					
Accomplishments/Planned Programs Subtotals	13.951	21.131	16.804	0.000	16.804

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
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D. Acquisition Strategy

RDT&E Contracts are Competitive Procurements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 0829 / *Afloat Energy Technology*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NSWC Philadelphia : Philadelphia, PA	4.834	0.800	Nov 2022	1.715	Nov 2023	0.250	Nov 2024	-		0.250	0.000	7.599	-
Primary Hardware Development	WR	NSWC Carderock : Bethesda, MD	8.983	0.612	Dec 2022	0.000		0.000		-		0.000	0.000	9.595	-
Engineering Development	WR	NSWC Carderock : Bethesda, MD	10.055	0.000		2.436	Nov 2023	1.520	Nov 2024	-		1.520	0.000	14.011	-
System Development	C/BOA	NAWC-AD : Lakehurst, NJ	8.978	0.500	Jan 2023	0.000		0.000		-		0.000	0.000	9.478	-
Primary Hardware Development	C/CPAF	NSWC Phila : Philadelphia, PA	0.000	3.530	Feb 2023	0.000		1.000	Jan 2025	-		1.000	0.000	4.530	-
System Engineering	WR	NSWC CR : Crane, Indiana	0.300	0.000		0.035	Nov 2023	0.000		-		0.000	0.000	0.335	-
Primary Hardware Development	WR	NSWC PD : Philadelphia, PA	0.000	1.580	Nov 2022	0.100	Nov 2023	0.300	Nov 2024	-		0.300	0.000	1.980	-
Engineering Development	WR	NSWC PD : Philadelphia, PA	0.000	0.000		0.655	Nov 2023	0.200	Nov 2024	-		0.200	0.000	0.855	-
Engineering Development	MIPR	Army Research Lab : Arlington, TX	0.000	0.000		0.150	Jan 2024	0.150	Jan 2025	-		0.150	0.000	0.300	-
System Development	C/CPFF	FEDSIM : Washington, DC	0.000	0.000		0.512	Jan 2024	0.479	Jan 2025	-		0.479	0.000	0.991	-
Engineering Development	C/CPAF	NSWC Philadelphia : Philadelphia, PA	0.000	0.000		0.505	Jan 2024	0.070	Feb 2025	-		0.070	0.000	0.575	-
Systems Engineering	WR	NSWC Caderock : Bethesda, MD	0.000	0.000		0.000		0.325	Nov 2024	-		0.325	0.000	0.325	-
Engineering Development	WR	Naval Research Lab : Washington, DC	0.000	0.000		0.000		0.150	Dec 2024	-		0.150	0.000	0.150	-
Engineering Development	WR	Johns Hopskins University : Baltimore, MD	0.000	0.000		0.000		0.050	Jan 2025	-		0.050	0.000	0.050	-
		Subtotal	33.150	7.022		6.108		4.494		-		4.494	0.000	50.774	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 0829 / *Afloat Energy Technology*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Adjustments from FY24 to FY25 and new FY25 additions in Systems Engineering, System Development, Engineering Development, and Primary Hardware Development are the result of a change in the mix of various R&D projects as discussed in the R-2A.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NSWC Carderock : Bethesda, MD	3.684	0.072	Nov 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Study Analysis	WR	NSWC CD : Bethesda, MD	1.174	0.000		0.624	Nov 2023	0.845	Nov 2024	-		0.845	Continuing	Continuing	Continuing
Development Support	C/CPAF	NAVSEA HQ : Washington, DC	3.018	0.123	Jan 2023	0.000		0.000		-		0.000	0.000	3.141	-
Development Support	WR	NSWC PD : Philadelphia, PA	3.538	0.000		0.300	Nov 2023	0.300	Nov 2024	-		0.300	0.000	4.138	-
Development Support	C/CPFF	NSWC Corona : Corona, IN	0.000	0.000		0.600	Nov 2023	0.625	Nov 2024	-		0.625	0.000	1.225	-
Software Support	C/CPFF	PEO STRI : Orlando, FL	0.000	0.000		0.243	Jan 2024	0.248	Dec 2024	-		0.248	0.000	0.491	-
Development Support	C/BA	Naval Postgraduate School : Monterey, CA	0.000	0.000		1.920	Jan 2024	1.916	Jan 2025	-		1.916	0.000	3.836	-
Study Analysis	WR	NSWC DD : Dahlgren, VA	0.000	0.000		0.360	Nov 2023	0.400	Nov 2024	-		0.400	0.000	0.760	-
Study Analysis	C/CPAF	NSWC Dahlgren : Dahlgren, VA	0.000	0.000		0.040	Jan 2024	0.000		-		0.000	0.000	0.040	-
Study Analysis	C/CPAF	NSWC Carderock : Carderock, MD	0.000	0.000		0.850	Jan 2024	0.684	Jan 2025	-		0.684	0.000	1.534	-
Study Analysis	C/CPFF	PEO STRI : Orlando, FL	0.000	0.000		1.000	Jan 2024	1.195	Dec 2024	-		1.195	0.000	2.195	-
Study Analysis	WR	NIWC PAC : San Diego, CA	0.000	0.000		0.000		0.035	Feb 2025	-		0.035	0.000	0.035	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 0829 / *Afloat Energy Technology*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	11.414	0.195		5.937		6.248		-		6.248	Continuing	Continuing	N/A

Remarks

Adjustments from FY24 to FY25 and new FY25 additions in Development Support, Software Support, and Study Analysis are the result of a change in the mix of various R&D projects as discussed in the R-2A.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/CPAF	NSWC Philadelphia : Philadelphia, PA	0.383	3.427	Jan 2023	4.410	Jan 2024	1.223	Jan 2025	-		1.223	0.000	9.443	-
Developmental Test & Evaluation (DT&E)	WR	NSWC PD : Philadelphia, PA	1.580	0.506	Dec 2022	1.636	Nov 2023	0.984	Nov 2024	-		0.984	0.000	4.706	-
Developmental Test & Evaluation (DT&E)	C/BOA	NAWC-AD : Lakehurst, NJ	4.252	0.000		0.000		0.000		-		0.000	0.000	4.252	-
Developmental Test & Evaluation (DT&E)	C/CPFF	FEDSIM : Washington, DC	0.000	0.890	Feb 2023	0.600	Jan 2024	0.600	Jan 2025	-		0.600	0.000	2.090	-
Developmental Test & Evaluation (DT&E)	WR	NSWC Caderock : Bethesda, MD	0.000	0.000		0.000		0.120	Nov 2024	-		0.120	0.000	0.120	-
Developmental Test & Evaluation (DT&E)	WR	DOT-MARAD : Washington, DC	0.000	0.000		0.000		0.936	Jan 2025	-		0.936	0.000	0.936	-
		Subtotal	6.215	4.823		6.646		3.863		-		3.863	0.000	21.547	N/A

Remarks

Adjustments from FY24 to FY25 and new FY25 additions in Developmental Test & Evaluation (DT&E) are the result of a change in the mix of various R&D projects as discussed in the R-2A.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0829 / *Afloat Energy Technology*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Support	WR	NSWC Philadelphia : Philadelphia, PA	7.586	0.196	Nov 2022	0.210	Nov 2023	0.204	Nov 2024	-		0.204	0.000	8.196	-
Travel	Allot	NAVSEA HQ : Washington, DC	0.252	0.015	Jan 2023	0.015	Mar 2024	0.015	Mar 2025	-		0.015	0.000	0.297	-
Program Management Support	C/CPAF	NAVSEA HQ : Washington, DC	7.671	1.463	Dec 2022	1.205	Jan 2024	0.978	Feb 2025	-		0.978	0.000	11.317	-
Project Management Support	WR	NSWC Carderock : Bethesda, MD	1.351	0.237	Nov 2022	0.510	Nov 2023	0.505	Nov 2024	-		0.505	0.000	2.603	-
Program Management Support	C/CPFF	NSWC Corona : Corona, IN	0.000	0.000		0.500	Nov 2023	0.497	Dec 2024	-		0.497	0.000	0.997	-
		Subtotal	16.860	1.911		2.440		2.199		-		2.199	0.000	23.410	N/A

Remarks

Decreases from FY24 to FY25 Project Management Support are the result of a decrease in overall program funding.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	67.639	13.951		21.131		16.804		-		16.804	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0829 / *Afloat Energy Technology*

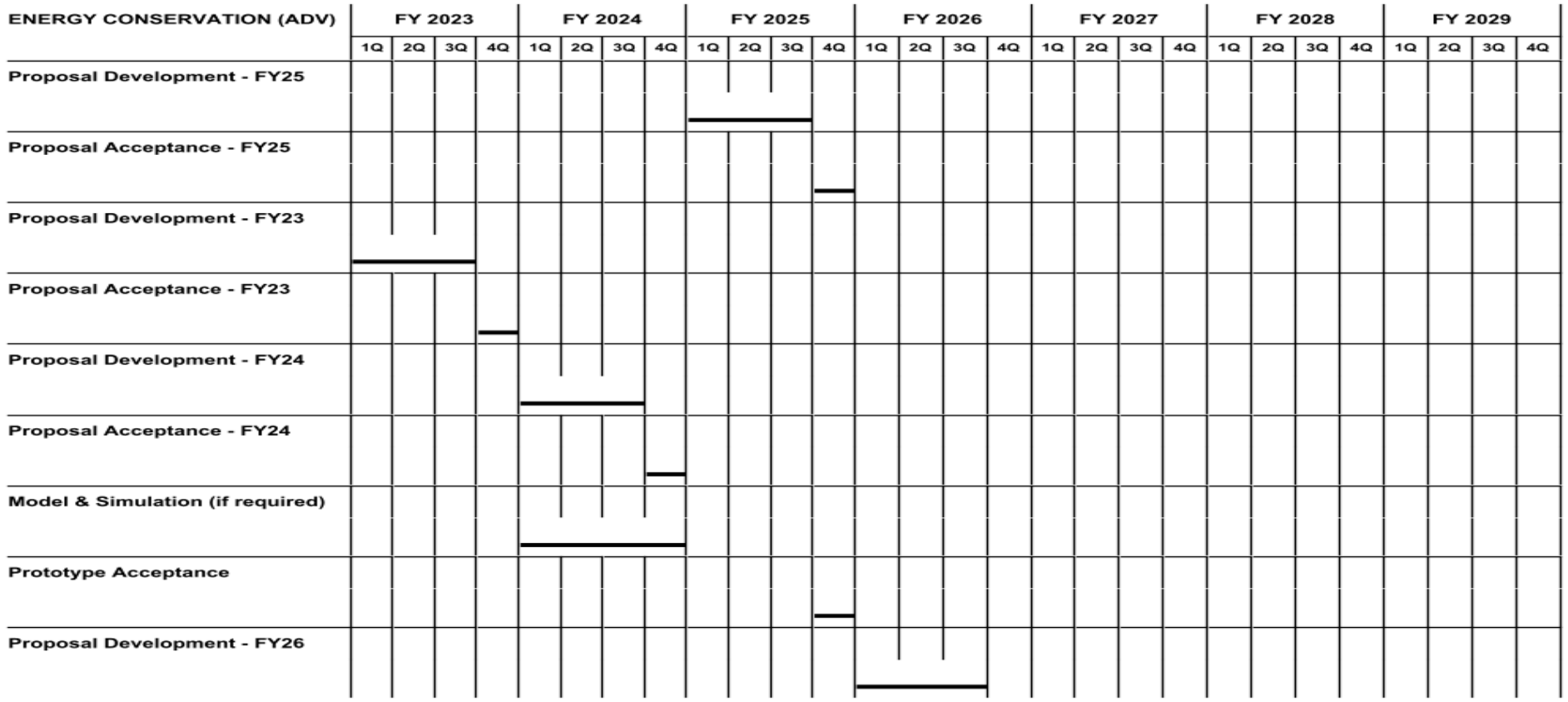

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0829 / *Afloat Energy Technology*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ENERGY CONSERVATION (ADV)				
Proposal Development - FY25:	1	2025	3	2025
Proposal Acceptance - FY25:	4	2025	4	2025
Proposal Development - FY23:	1	2023	3	2023
Proposal Acceptance - FY23:	4	2023	4	2023
Proposal Development - FY24:	1	2024	3	2024
Proposal Acceptance - FY24:	4	2024	4	2024
Model & Simulation (if required):	1	2024	4	2024
Prototype Acceptance:	4	2025	4	2025
Proposal Development - FY26:	1	2026	3	2026

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*				Project (Number/Name) 0838 / *Mobility Fuels (ADV)*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
0838: *Mobility Fuels (ADV)*	131.748	7.339	6.491	8.419	-	8.419	8.330	8.017	8.180	8.354	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program represents the Navy's only RDTE investment designed to maintain and enhance its capability to operate as a "smart" customer for aviation and ship tactical fuels that are an operationally critical, single point of failure, $4.0+ billion per year consumable requiring worldwide availability and interoperability.

Recent field problems have demonstrated the adverse effects that fuel-related problems can have on ship and aircraft performance, durability, and readiness. The potential risk and adverse operational impacts from fuel-related problems over the next decade, given the evolving production technologies, changing feedstocks, more stringent environmental regulations and the introduction of new operational requirements and platforms will continue to increase.

This program provides data and enables technology through laboratory, component, fuel system, engine, and platform tests. These evaluations relate the effects of changes in the Navy fuel properties and chemistry to the performance and durability of Naval ship, aircraft, ground and fuel distribution systems. The information is required by technical authorities and decision makers to: (a) assure interoperability with fuel procured from commercial/ international specifications, (b) determine the extent to which unnecessarily restrictive military specification requirements can be relaxed to reduce cost and increase availability worldwide, (c) provide guidance to fleet operators for the safe use of off-specification fuels or emerging CONOPS requiring the use of non-traditional fuels, (d) assure operational interoperability with evolving changes in fuel production technology, feedstocks, environmental regulations and tactical system demands, (e) improve the capability and reduce the cost of field fuel quality surveillance, and (f) facilitate rapid identification and resolution of field identified fuel deficiencies.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Title: Naval Tactical Fuels	7.339	6.491	8.419	0.000	8.419
Articles:	-	-	-	-	-
Description: Perform development, test and evaluation work on Naval tactical fuels to: a) assure interoperability with commercial/international fuel specifications, b) determine the extent to which unnecessarily restrictive military specification features can be relaxed to reduce cost and increase availability worldwide; c) provide guidance to fleet operators for the safe use of off-specification or non-primary fuels , d) validate periodic changes to the Navy tactical fuel specifications to ensure fuel quality and avoid fleet operating problems while accommodating evolutionary changes in the fuel supply industry and e) improve fleet methods to ensure fuel quality and performance.					
FY 2024 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0838 / *Mobility Fuels (ADV)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Continue to conduct lab, rig, component, and engine testing to assure fuel interoperability with evolving commercial fuel specifications and emerging operational and platform requirements. Develop and trial modules to the Naval Fuel Data Analytics Tool adding hardware and non-specification test data to the fuel property and compositional modules already developed. Field trial additive detection capability in support of deployed additization requirements. ***FY 2025 Base Plans:*** Conduct lab, rig, component, and engine testing to assure fuel interoperability with evolving commercial fuel specifications and emerging operational and platform requirements. Develop and validate Navy Fuel Analysis and Characterization Tool (NFACT) modules that estimate fuel properties, assess hardware performance, and determine a fuel's fit-for-use based on its composition. Develop expeditionary fuel quality surveillance equipment in support of Distributed Maritime Operations. Provide technical assessments on the operational impact of fuel additives and fuel properties expansion to increase the availability of Navy fuels. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 increase ($1.928M) supports the development of expeditionary fuel quality surveillance equipment and the testing to assess fuel additives and fuel property expansion.					
Accomplishments/Planned Programs Subtotals	7.339	6.491	8.419	0.000	8.419

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Testing efforts will be competitively contracted, and performed under Cost Plus Fixed Fee and Firm Fixed Price contracts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 0838 / *Mobility Fuels (ADV)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NRL : Washington, D.C.	10.166	1.062	Nov 2022	0.469	Nov 2023	0.204	Dec 2024	-		0.204	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCAD : Patuxent River, MD	27.139	2.000	Nov 2022	1.984	Nov 2023	2.152	Dec 2024	-		2.152	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : Philadelphia, PA	5.831	0.500	Nov 2022	0.400	Nov 2023	0.650	Nov 2024	-		0.650	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : Bethesda, MD	0.462	0.000		0.000		0.000		-		0.000	0.000	0.462	0.462
Systems Engineering	C/FFP	Various : Various	7.054	1.200	Jan 2023	0.660	Jun 2024	1.403	May 2025	-		1.403	0.000	10.317	10.317
Prior year Prod Dev no longer funded in the FYDP	Various	Various : Various	0.161	0.000		0.000		0.000		-		0.000	0.000	0.161	0.161
Systems Engineering	MIPR	Army Ground Vehicle Systems Center : Warren, MI	0.500	0.000		0.000		0.200	Oct 2024	-		0.200	0.000	0.700	0.700
Systems Engineering	MIPR	AFRL : Dayton, OH	0.221	0.000		0.000		0.000		-		0.000	0.000	0.221	0.221
Systems Engineering	MIPR	NPGS : Monterey, CA	0.000	0.000		0.000		0.200	Jan 2025	-		0.200	0.000	0.200	0.200
		Subtotal	51.534	4.762		3.513		4.809		-		4.809	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	6.849	0.600	Nov 2022	0.500	Nov 2023	1.300	Dec 2024	-		1.300	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPFF	Life Cycle Engineering : Charleston, SC	22.423	1.614	Mar 2023	2.028	Mar 2024	1.100	May 2025	-		1.100	0.000	27.165	27.165
Developmental Test & Evaluation (DT&E)	C/CPFF	Univ of Dayton Research Inst : Dayton, OH	1.289	0.000		0.000		0.000		-		0.000	0.000	1.289	1.289
Developmental Test & Evaluation (DT&E)	WR	US Naval Academy : Annapolis, MD	0.228	0.040	May 2023	0.100	May 2024	0.000		-		0.000	0.000	0.368	0.368

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 0838 / *Mobility Fuels (ADV)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/FFP	Various : Various	7.826	0.000		0.000		1.000	Mar 2025	-		1.000	0.000	8.826	8.826
Developmental Test & Evaluation (DT&E)	MIPR	DLA-Energy : Ft. Belvoir, VA	0.752	0.038	Mar 2023	0.040	May 2024	0.000		-		0.000	0.000	0.830	0.830
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	31.545	0.000		0.000		0.000		-		0.000	0.000	31.545	31.545
		Subtotal	70.912	2.292		2.668		3.400		-		3.400	Continuing	Continuing	N/A

Remarks

All prior year lines have been consolidated.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Patuxent River, MD	2.586	0.270	Nov 2022	0.300	Oct 2023	0.200	Dec 2024	-		0.200	Continuing	Continuing	Continuing
Program Management Support	C/FFP	Coord Research Council : Alpharetta, GA	0.100	0.015	Dec 2022	0.010	Oct 2023	0.010	Oct 2024	-		0.010	0.000	0.135	0.135
Prior year Mgmt Supp no longer funded in the FYDP	Various	Various : Various	6.616	0.000		0.000		0.000		-		0.000	0.000	6.616	6.616
		Subtotal	9.302	0.285		0.310		0.210		-		0.210	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	131.748	7.339		6.491		8.419		-		8.419	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0838 / *Mobility Fuels (ADV)*

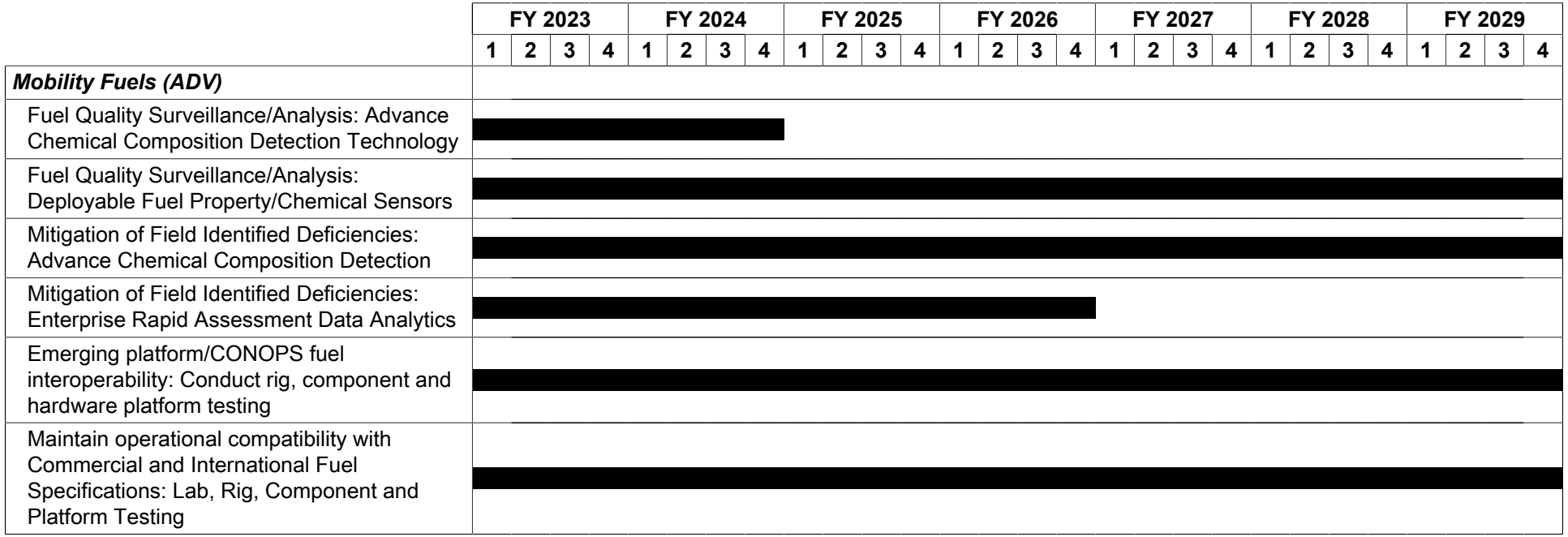


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0838 / *Mobility Fuels (ADV)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Mobility Fuels (ADV)				
Fuel Quality Surveillance/Analysis: Advance Chemical Composition Detection Technology	1	2023	4	2024
Fuel Quality Surveillance/Analysis: Deployable Fuel Property/Chemical Sensors	1	2023	4	2029
Mitigation of Field Identified Deficiencies: Advance Chemical Composition Detection	1	2023	4	2029
Mitigation of Field Identified Deficiencies: Enterprise Rapid Assessment Data Analytics	1	2023	4	2026
Emerging platform/CONOPS fuel interoperability: Conduct rig, component and hardware platform testing	1	2023	4	2029
Maintain operational compatibility with Commercial and International Fuel Specifications: Lab, Rig, Component and Platform Testing	1	2023	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 0928 / *Shore Energy Technology*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
0928: *Shore Energy Technology*	60.931	1.967	2.059	2.133	-	2.133	2.176	2.221	2.266	2.313	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Legislation, Executive Orders (EO), and SECNAV Guidance direct DoN to increase energy security through resiliency, efficiency, reliability, cybersecurity and alternative energy sources. This guidance includes the National Defense Strategy (NDS) of 2018, A Design for Maintaining Maritime Superiority 2.0, and the NAVFAC Strategic Design 2.0. Guidance directs DOD to posture logistics capability (projected from Navy Installations) ashore and at sea in ways that allow the fleet to operate globally, at a pace that can be sustained over time. Improved resilience of our installations (employing key technology focus areas defined in the NDS) will enable platform refueling, re-arming, resupply and repair. Installations shall enable Dynamic Force Employment and Distributed Lethality.

This Energy RDT&E Project will test, evaluate, and validate components as well as demonstrate cost-effective and technical viability of energy security , efficiency, resilience, reliability, and technologies. All efforts will be coordinated across DOD and with other agencies as appropriate. Specifically, this project aims to pursue three areas of development, testing and evaluation: (A) Modeling and possible prototype testing of new energy sources for use at Naval installations with potential for widespread applicability to energy security; (B) It will support demonstration and validation of advanced electric grid management systems, known as "Smart Grid" and "Micro Grid" technology, for use at Naval installations to enable improved energy security; (C) Demonstration and Validation of Alternative Energy, Energy Efficiency, and Resiliency and Smart Energy Management Technology. Cyber Security resilience technology shall align to NIST 800-82 and be interoperable within the NAVFAC cybersecurity enclave.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Shore Energy Technology	1.967	2.059	2.133	0.000	2.133
Articles:	-	-	-	-	-
FY 2024 Plans: - Develop and demonstrate energy storage sites to include cyber security measures. - Develop and demonstrate adaptable microgrids that utilize artificial intelligence and solid-state power electronics using renewable energy test bed. - Develop and demonstrate predictive modeling, neural network, and predictive energy tools.					
FY 2025 Base Plans: -Continue to develop and demonstrate energy storage sites to include cyber security measures. -Continue to develop and demonstrate adaptable microgrids that utilize artificial intelligence and solid-state power electronics using renewable energy test bed.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0928 / *Shore Energy Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
-Continue to develop and demonstrate predictive modeling, neural network, and predictive energy tools. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 increase ($0.074M) supports the demonstration of advanced energy collection and energy storage technologies.					
Accomplishments/Planned Programs Subtotals	1.967	2.059	2.133	0.000	2.133

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Demonstration and validation are conducted for maximum transfer and interaction with industry such as to influence the industry COTS with the results of this demonstration and prototype validation. Acquisition is based on performance specifications enabled by this project.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 0928 / *Shore Energy Technology*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Renewable Energy	WR	EXWC : Port Hueneme, CA	42.720	0.412	Jan 2023	0.425	Dec 2023	0.450	Dec 2024	-		0.450	Continuing	Continuing	Continuing
Energy Resiliency and Reliability, Security and Systems (Includes cybersecurity)	Various	EXWC : Port Hueneme, CA	10.644	0.700	Jan 2023	0.724	Dec 2023	0.742	Dec 2024	-		0.742	Continuing	Continuing	Continuing
Energy Storage	WR	EXWC : Port Hueneme, CA	7.092	0.505	Jan 2023	0.540	Jan 2024	0.560	Jan 2025	-		0.560	Continuing	Continuing	Continuing
Renewable Energy (Direct Cite)	Various	EXWC : Port Hueneme, CA	0.475	0.000		0.000		0.000		-		0.000	0.000	0.475	-
Energy Resiliency and Reliability, Security and Systems (includes cybersecurity) - Direct Cite	Various	EXWC : Port Hueneme, CA	0.000	0.350	Apr 2023	0.370	Apr 2024	0.381	Apr 2025	-		0.381	Continuing	Continuing	Continuing
		Subtotal	60.931	1.967		2.059		2.133		-		2.133	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	60.931	1.967		2.059		2.133		-		2.133	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0928 / *Shore Energy Technology*

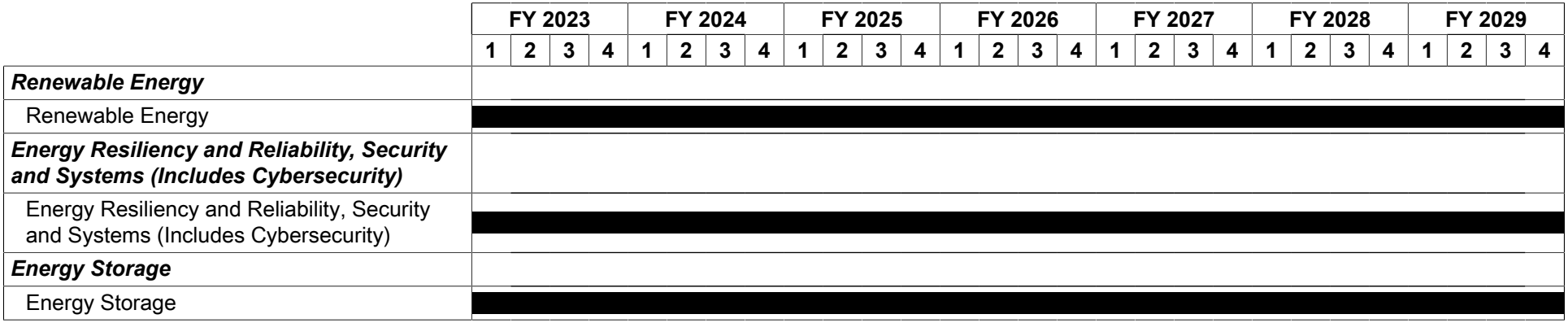


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0928 / *Shore Energy Technology*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Renewable Energy				
Renewable Energy	1	2023	4	2029
Energy Resiliency and Reliability, Security and Systems (Includes Cybersecurity)				
Energy Resiliency and Reliability, Security and Systems (Includes Cybersecurity)	1	2023	4	2029
Energy Storage				
Energy Storage	1	2023	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*				Project (Number/Name) 0996 / *Aircraft Energy Technology*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
0996: *Aircraft Energy Technology*	184.506	21.748	30.419	21.587	-	21.587	17.554	17.430	17.295	17.663	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Naval aviation must operate independently worldwide often with limited logistics support. Additionally, legacy and emerging aircraft continually add capability to enhance their lethality and survivability. Improving an aircraft's utilization and management of energy has a direct relationship to enhanced combat capability to meet the challenges of emerging threats. This program engages technical experts from across Naval aviation, industry, and academia to identify best practices and technologies for development, testing and validation to determine technical viability and assess benefit to mission capability.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Aircraft Operational Energy	21.748	30.419	21.587	0.000	21.587
Articles:	-	-	-	-	-
FY 2024 Plans: Continue identification, testing and assessment of Operational Energy technologies to enhance Naval Aviation operational capability. Build and validate integrated models to identify and support resolution of legacy aircraft power and thermal management challenges. Conduct certification testing of common safe and affordable lithium ion battery prototypes. Mature and demonstrate operational energy benefits of P-8 finlet and aerial refueling technologies. Assess and mature engine component efficiency technologies. Develop and mature novel engine inlet particle separation.					
FY 2025 Base Plans: Continue identification, testing and assessment of Operational Energy technologies to enhance Naval Aviation operational capability. Validate VR and AI technologies to optimize pilot training and scheduling. Validate integrated models to identify and support resolution of legacy aircraft power and thermal management challenges. Conduct certification testing of common safe and affordable lithium ion battery prototypes. Flight test P-8 finlets. Mature more efficient aerial refueling technologies. Assess and mature engine component efficiency technologies. Assess and mature air vehicle efficiency technologies.					
FY 2025 OCO Plans: N/A					
FY 2024 to FY 2025 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0996 / *Aircraft Energy Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
FY25 decrease ($8.832M) is due to completion and transition of multiple air vehicle and efficiency projects.					
Accomplishments/Planned Programs Subtotals	21.748	30.419	21.587	0.000	21.587

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This is a non-acquisition program that develops, evaluates, and validates technologies in support of Navy Operational Energy goals for increasing aircraft mission capability.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 0996 / *Aircraft Energy Technology*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCAD : Patuxent River, MD	15.554	3.145	Dec 2022	4.061	Dec 2023	3.912	Dec 2024	-		3.912	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	The Boeing Company : Seattle, WA	2.000	0.000		0.000		0.000		-		0.000	0.000	2.000	2.000
Systems Engineering	C/CPFF	Various : Various	20.280	13.403	May 2023	7.000	Mar 2024	5.700	Jun 2025	-		5.700	0.000	46.383	46.383
Systems Engineering	C/BA	Deloitte Consulting : Alexandria, VA	5.671	0.000		0.000		0.000		-		0.000	0.000	5.671	5.671
Systems Engineering-Prior Years	Various	Various : Various	3.612	0.000		7.000	Jun 2024	0.000		-		0.000	0.000	10.612	10.612
Systems Engineering	WR	Naval Research Lab : Washington DC	0.000	0.400	Dec 2022	0.408	Dec 2023	0.450	Dec 2024	-		0.450	0.000	1.258	1.258
Systems Engineering	C/CPFF	Air Force Research Lab : Wright Patterson AFB, Ohio	0.000	0.250	Dec 2022	0.250	Dec 2023	0.300	Dec 2024	-		0.300	0.000	0.800	0.800
Systems Engineering	C/CPFF	GE Aviation : Cincinnati, Ohio	0.000	0.750	Mar 2023	2.300	Dec 2023	1.555	May 2025	-		1.555	0.000	4.605	4.605
Systems Engineering	C/CPFF	Creare : Hanover, NH	0.000	0.400	Nov 2022	0.000		0.000		-		0.000	0.000	0.400	0.400
Systems Engineering	C/CPFF	Various : TBD	0.000	0.000		2.500	Mar 2024	1.800	Mar 2025	-		1.800	0.000	4.300	4.300
		Subtotal	47.117	18.348		23.519		13.717		-		13.717	Continuing	Continuing	N/A

Remarks

5. All Prior Year lines have been consolidated.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	7.737	1.500	Dec 2022	3.000	Mar 2024	3.032	Mar 2025	-		3.032	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPFF	Various : Various	4.740	0.000		2.000	Dec 2023	3.500	Jun 2025	-		3.500	0.000	10.240	10.240

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 0996 / *Aircraft Energy Technology*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	117.125	0.000		0.000		0.000		-		0.000	0.000	117.125	117.125
Developmental Test & Evaluation (DT&E)	WR	NSWC : Crane, IN	0.000	0.500	Dec 2022	0.500	Dec 2023	0.700	Dec 2024	-		0.700	0.000	1.700	1.700
Developmental Test & Evaluation (DT&E)	C/CPFF	EIC Laboratories : Norwood, MA	0.000	0.750	Mar 2023	0.750	Mar 2024	0.000		-		0.000	0.000	1.500	1.500
		Subtotal	129.602	2.750		6.250		7.232		-		7.232	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Patuxent River, MD	3.275	0.650	Dec 2022	0.650	Dec 2023	0.638	Dec 2024	-		0.638	Continuing	Continuing	Continuing
Prog Mgnt no longer funded in the FYDP	Various	Various : Various	4.512	0.000		0.000		0.000		-		0.000	0.000	4.512	4.512
		Subtotal	7.787	0.650		0.650		0.638		-		0.638	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	184.506	21.748		30.419		21.587		-		21.587	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0996 / *Aircraft Energy Technology*

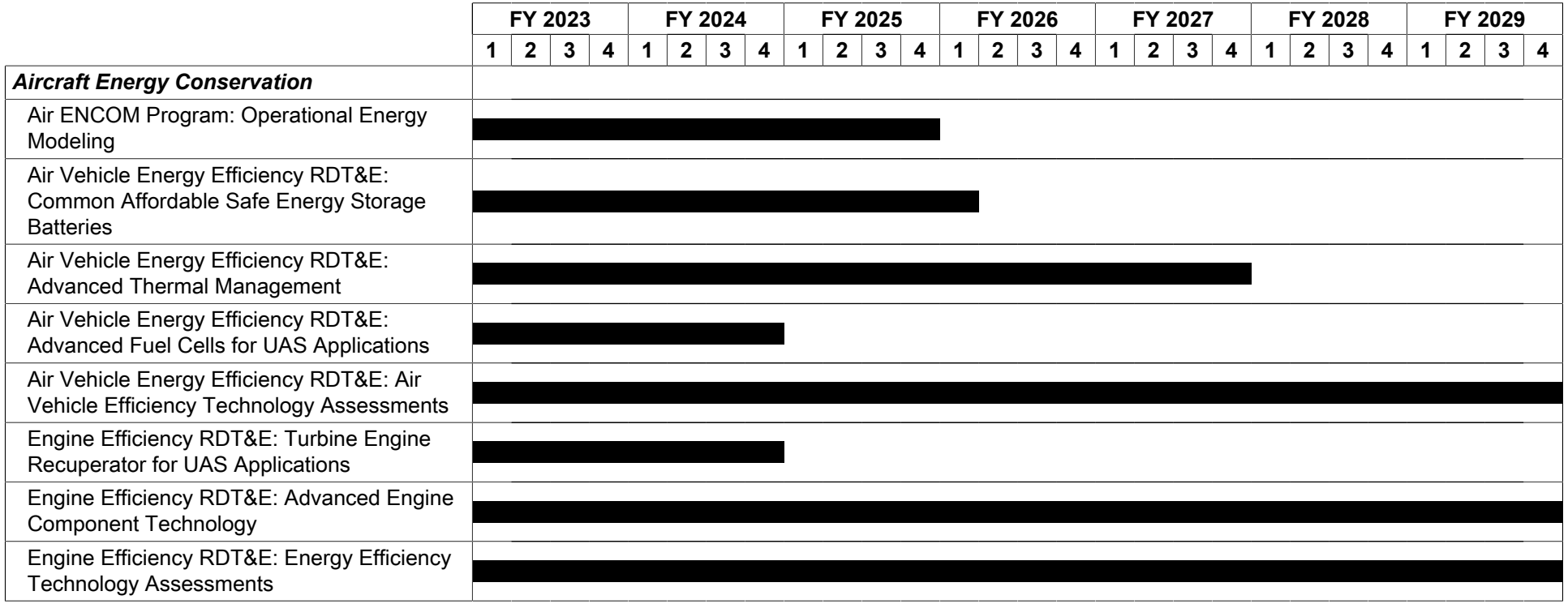


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 0996 / *Aircraft Energy Technology*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Aircraft Energy Conservation				
Air ENCOM Program: Operational Energy Modeling	1	2023	4	2025
Air Vehicle Energy Efficiency RDT&E: Common Affordable Safe Energy Storage Batteries	1	2023	1	2026
Air Vehicle Energy Efficiency RDT&E: Advanced Thermal Management	1	2023	4	2027
Air Vehicle Energy Efficiency RDT&E: Advanced Fuel Cells for UAS Applications	1	2023	4	2024
Air Vehicle Energy Efficiency RDT&E: Air Vehicle Efficiency Technology Assessments	1	2023	4	2029
Engine Efficiency RDT&E: Turbine Engine Recuperator for UAS Applications	1	2023	4	2024
Engine Efficiency RDT&E: Advanced Engine Component Technology	1	2023	4	2029
Engine Efficiency RDT&E: Energy Efficiency Technology Assessments	1	2023	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*				Project (Number/Name) 2566 / *Battery Development and Safety*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
2566: *Battery Development and Safety*	4.290	12.219	12.114	11.667	-	11.667	8.552	7.092	7.683	7.845	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Provide Program Management Support for Battery Development and Safety program.

A. Mission Description and Budget Item Justification

1)Provide an advanced battery database with standard battery families for program offices to use to allow for selection of batteries early in the design process increasing the likelihood of design and fielding success, 2) leverage the battery database to begin common battery design efforts to save cost, 3) establish common battery standards and design requirements (e.g., propagation resistant designs, standard battery monitoring and casualty detection systems, etc.) to make advanced batteries safer and therefore deployable, 4) develop and test standard battery storage/container systems that can safely house batteries and withstand catastrophic failure (thermal runaway) of the batteries within the container while minimizing damage to surrounding equipment and platforms, 5) streamline the battery safety certification process especially for high energy storage magazines and other large battery designs (lasers) to allow
battery based weapon systems to be fielded in time to support strategic needs, 6) develop hazard mitigation technologies to support rapid safe deployment of advanced batteries to support weapon systems, 7) generate analytics that characterize the Department's current and projected energy/advanced battery needs, 8) establish the Navy's contribution to DoD and cross-service advanced battery supply chain efforts.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Battery Development and Safety	12.219	12.114	11.667	0.000	11.667
Articles:	-	-	-	-	-
Description: Provide Program Management Support for Battery Development and Safety program.					
FY 2024 Plans: FY24 plans consist of the following actions: 1) Streamline and accelerate the battery certification process through the implementation of process and capability improvements. 2) Establish common battery standards and design requirements to make advanced batteries safer and affordable through commonality. 3) Develop hazard mitigation technologies to support rapid safe deployment of advanced batteries to support weapon systems. 4) Generate analytics that characterize current and projected energy/advanced battery needs. 5) Establish the Navy's contribution to DoD and cross service advanced battery supply chain efforts.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 2566 / *Battery Development and Safety*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
6) Leverage and expand the battery database to begin common battery design efforts to save cost. ***FY 2025 Base Plans:*** FY25 plans consist of the following actions: 1) Continue to streamline and accelerate the battery certification process through the implementation of process and capability improvements. 2) Continue to establish common battery standards and design requirements to make advanced batteries safer and affordable through commonality. 3) Continue to develop hazard mitigation technologies to support rapid safe deployment of advanced batteries to support weapon systems. 4) Continue to generate analytics that characterize current and projected energy/advanced battery needs. 5) Continue to establish the Navy's contribution to DoD and cross service advanced battery supply chain efforts. 6) Continue to leverage and expand the battery database to begin common battery design efforts to save cost. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 decrease ($0.447M) is due to completion of R&D analysis of the lithium-ion battery supply chain.					
Accomplishments/Planned Programs Subtotals	12.219	12.114	11.667	0.000	11.667

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

RDT&E Contracts are Competitive Procurements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 2566 / *Battery Development and Safety*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Development	WR	NSWC PD : Philadelphia, PA	0.319	0.901	Nov 2022	0.326	Nov 2023	0.292	Nov 2024	-		0.292	Continuing	Continuing	Continuing
Primary Hardware Development	WR	NSWC CD : Bethesda, MD	0.418	0.975	Nov 2022	0.326	Nov 2023	0.718	Nov 2024	-		0.718	Continuing	Continuing	Continuing
Engineering Development	WR	NSWC CD : Bethesda, MD	0.091	0.313	Nov 2022	0.305	Nov 2023	0.577	Nov 2024	-		0.577	Continuing	Continuing	Continuing
Demonstration & Evaluation	WR	NSWC CD : Bethesda, MD	0.090	0.313	Nov 2022	0.248	Nov 2023	0.179	Nov 2024	-		0.179	Continuing	Continuing	Continuing
System Development	C/BOA	NAWC-AD : Lakehurst, NJ	0.166	0.509	Nov 2022	0.106	Nov 2023	0.950	Nov 2024	-		0.950	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC DD : Dahlgren, VA	0.158	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Primary Hardware Development	WR	NSWC CR : Crane, Indiana	0.000	0.000		0.106	Nov 2023	0.227	Nov 2024	-		0.227	0.000	0.333	-
Engineering Development	WR	NSWC CR : Crane, Indiana	0.000	0.000		0.234	Nov 2023	0.627	Nov 2024	-		0.627	0.000	0.861	-
Demonstration and Evaluation	WR	NSWC CR : Crane, Indiana	0.000	0.000		0.094	Nov 2023	0.091	Nov 2024	-		0.091	0.000	0.185	-
Engineering Development	MIPR	General Technical Services, LLC : Wall Township, NJ	0.000	1.000	Sep 2024	1.517	Nov 2023	1.430	Nov 2024	-		1.430	0.000	3.947	-
Primary Hardware Development	MIPR	ManTech International Corporation : Herndon, VA	0.000	1.000	Sep 2024	1.732	Nov 2023	1.491	Nov 2024	-		1.491	0.000	4.223	-
		Subtotal	1.242	5.011		4.994		6.582		-		6.582	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NSWC CD : Bethesda, MD	0.319	0.901	Dec 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 2566 / *Battery Development and Safety*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Study Analysis	WR	NSWC CD : Bethesda, MD	0.476	0.901	Nov 2022	0.362	Nov 2023	0.152	Nov 2024	-		0.152	Continuing	Continuing	Continuing
Development Support	C/CPAF	NSWC PD : Philadelphia, PA	0.319	0.901	Dec 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Development Support	WR	NSWC PD : Philadelphia, PA	0.166	0.558	Dec 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Study Analysis	WR	NSWC CR : Crane, Indiana	0.000	0.000		0.819	Nov 2023	0.525	Nov 2024	-		0.525	0.000	1.344	-
Study Analysis	MIPR	General Technical Services, LLC : Wall Township, NJ	0.000	0.000		1.618	Nov 2023	1.347	Nov 2024	-		1.347	0.000	2.965	-
Study Analysis	MIPR	The MITRE Corporation : McLean, VA	0.000	0.000		0.306	Nov 2023	0.100	Nov 2024	-		0.100	0.000	0.406	-
Development Support	MIPR	DTIC : Fort Belvior, VA	0.000	0.000		0.106	Nov 2023	0.095	Nov 2024	-		0.095	0.000	0.201	-
		Subtotal	1.280	3.261		3.211		2.219		-		2.219	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC CD : Bethesda, MD	0.382	0.793	Jan 2023	0.648	Nov 2023	0.508	Nov 2024	-		0.508	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	NSWC CD : Bethesda, MD	0.318	0.793	Jan 2023	0.648	Nov 2023	0.508	Nov 2024	-		0.508	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	NAWC-AD : Paxtuxtent, MD	0.200	0.470	Feb 2023	0.505	Nov 2023	0.387	Nov 2024	-		0.387	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	NSWC CR : Crane, IN	0.200	0.470	Nov 2022	0.476	Nov 2023	0.268	Nov 2024	-		0.268	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC CR : Crane, IN	0.434	0.656	Nov 2022	0.477	Nov 2023	0.268	Nov 2024	-		0.268	Continuing	Continuing	Continuing
		Subtotal	1.534	3.182		2.754		1.939		-		1.939	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 2566 / *Battery Development and Safety*	

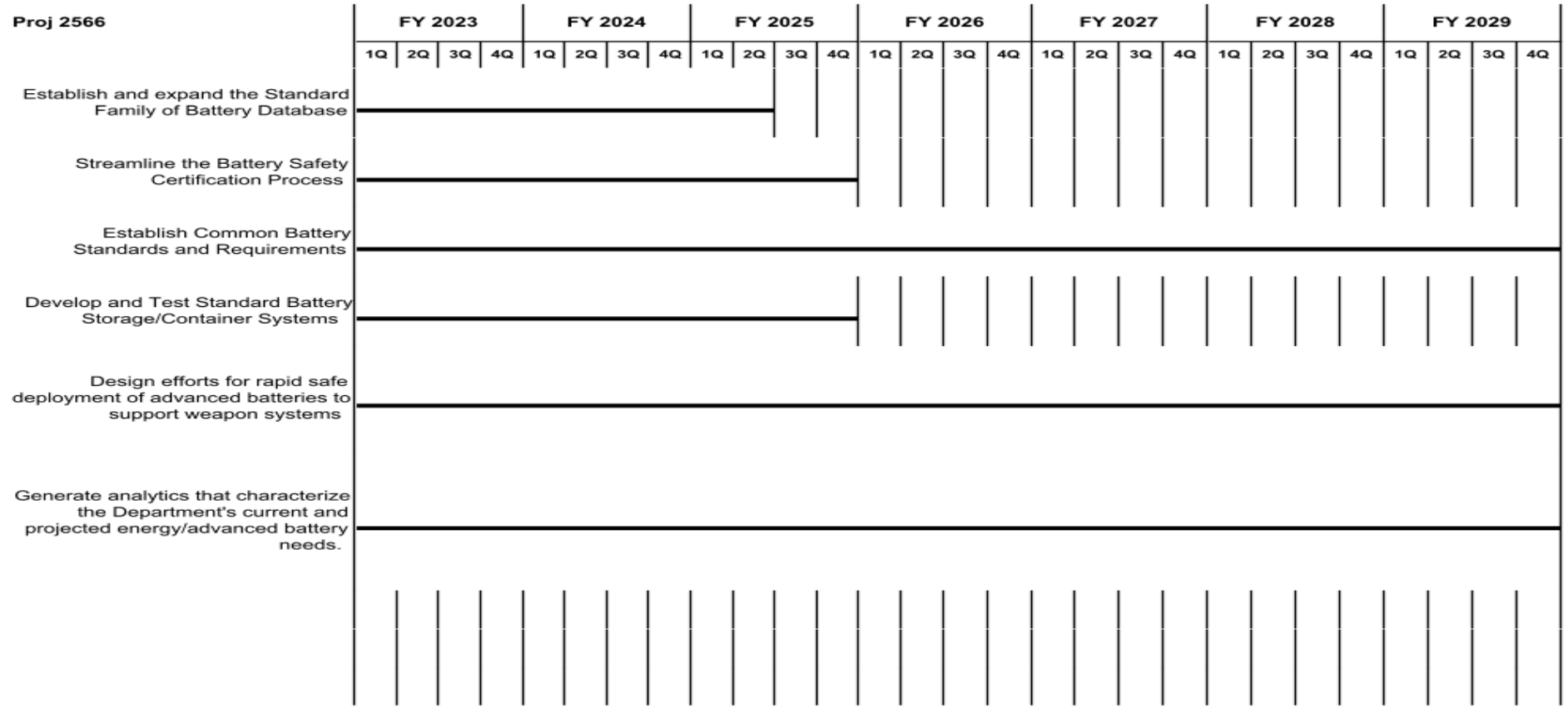
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NSWC PD : Philadelphia, PA	0.076	0.196	Nov 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Travel	Allot	NAVSEA HQ : Washington, DC	0.022	0.059	Jan 2023	0.031	Nov 2023	0.028	Nov 2024	-		0.028	Continuing	Continuing	Continuing
Total Assets	WR	NSWC CD : Bethesda, MD	0.090	0.391	Feb 2023	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support	WR	NSWC CD : Bethesda, MD	0.046	0.119	Dec 2022	0.305	Nov 2023	0.273	Nov 2024	-		0.273	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Serco Inc. : Herndon, VA	0.000	0.000		0.819	Nov 2023	0.626	Nov 2024	-		0.626	0.000	1.445	-
		Subtotal	0.234	0.765		1.155		0.927		-		0.927	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.290	12.219		12.114		11.667		-		11.667	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 2566 / *Battery Development and Safety*



2025DON - 0603724N - 2566

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 2566 / *Battery Development and Safety*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2566				
Establish and expand the Standard Family of Battery Database:	1	2023	2	2025
Streamline the Battery Safety Certification Process:	1	2023	4	2025
Establish Common Battery Standards and Requirements:	1	2023	4	2029
Develop and Test Standard Battery Storage/Container Systems:	1	2023	4	2025
Design efforts for rapid safe deployment of advanced batteries to support weapon systems:	1	2023	4	2029
Generate analytics that characterize the Department's current and projected energy/ advanced battery needs.:	1	2023	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*				Project (Number/Name) 3270 / *Sec. 2912 Operational Energy Savings*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
3270: *Sec. 2912 Operational Energy Savings*	0.000	7.700	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.700
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Energy-REACTS is Department of Navy Operational Energy Portfolio that is executed under the authority of 10 U.S.C. Section 2912. These funds are one-year monies available for use to the Navy and Marine Corps strictly for the implementation of non-program of record needs in support of operational energy resilience, efficiencies, mission assurance, energy conservation, training, or energy security initiatives.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: 3270 Sec 2912 Operational Energy Funding	7.700	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2024 Plans: N/A					
FY 2025 Base Plans: N/A					
FY 2025 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	7.700	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This is a non-acquisition portfolio that develops, evaluates, and validates technologies in support of Naval Energy Goals that promote energy resilience, efficiencies, mission assurance, energy conservation, training, or energy security initiatives towards increased mission capability.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 3270 / *Sec. 2912 Operational Energy Savings*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCAD : Patuxent River, MD	0.000	0.400	Jun 2023	0.000		0.000		-		0.000	0.000	0.400	-
Systems Engineering	TBD	Various : Various	0.000	5.540	Oct 2023	0.000		0.000		-		0.000	0.000	5.540	-
Systems Engineering	C/BA	Cintel, Inc : Huntsville, AL	0.000	0.905	Aug 2023	0.000		0.000		-		0.000	0.000	0.905	-
		Subtotal	0.000	6.845		0.000		0.000		-		0.000	0.000	6.845	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	TBD	TBD : TBD	0.000	0.000	Aug 2023	0.000		0.000		-		0.000	0.000	0.000	-
Developmental Test & Evaluation (DT&E)	TBD	NAVFAC EXWC : Port Hueneme, CA	0.000	0.475	Aug 2023	0.000		0.000		-		0.000	0.000	0.475	-
		Subtotal	0.000	0.475		0.000		0.000		-		0.000	0.000	0.475	N/A

Management Services ($ in Millions)

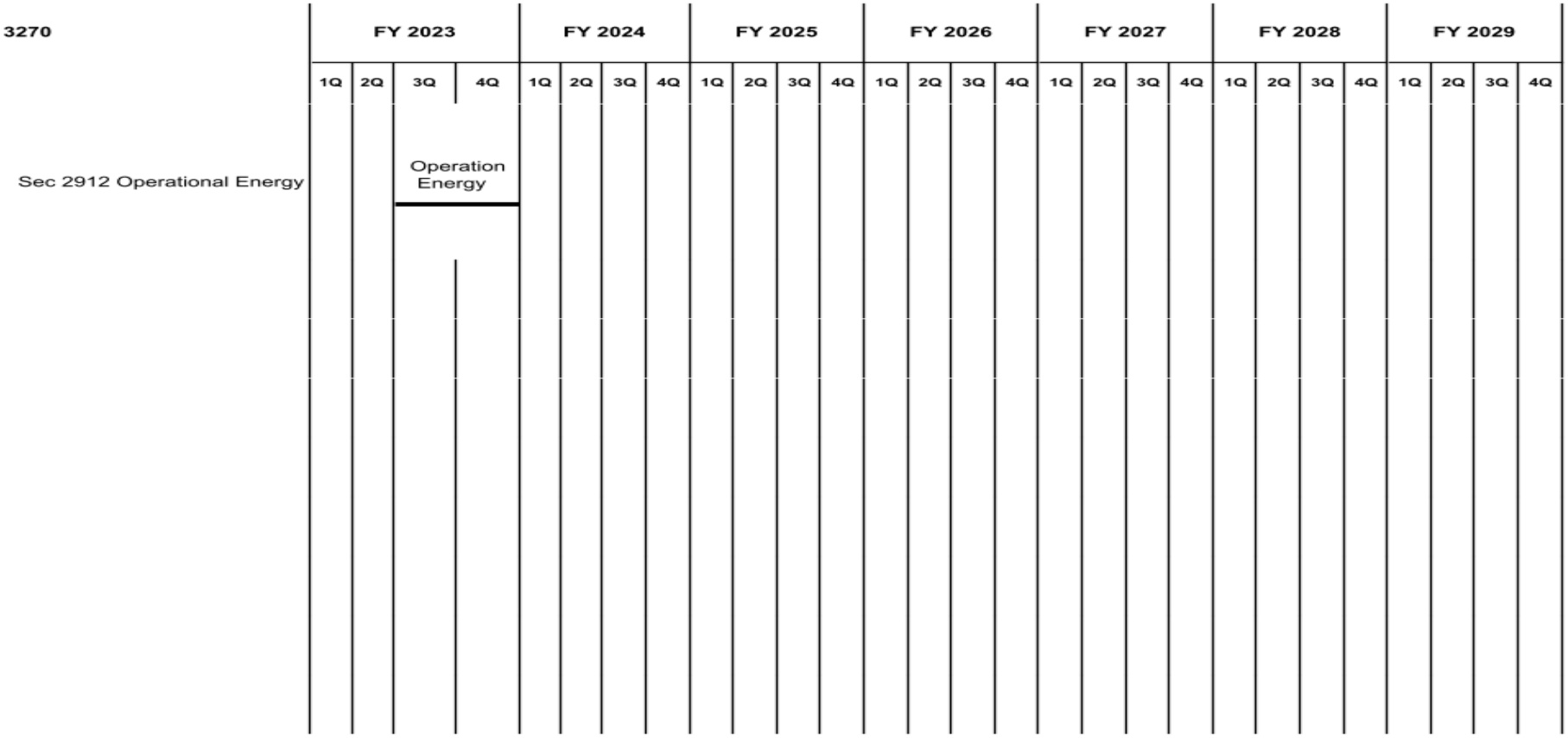
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Patuxent River, MD	0.000	0.100	Jun 2023	0.000		0.000		-		0.000	0.000	0.100	-
Program Management Support	WR	NSWCCD : Bethesda, MD	0.000	0.140	Aug 2023	0.000		0.000		-		0.000	0.000	0.140	-
Program Management Support	WR	NSWCIH : Indian Head, VA	0.000	0.140	Jan 2024	0.000		0.000		-		0.000	0.000	0.140	-
		Subtotal	0.000	0.380		0.000		0.000		-		0.000	0.000	0.380	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 3270 / *Sec. 2912 Operational Energy Savings*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	7.700		0.000		0.000		-		0.000	0.000	7.700	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 3270 / *Sec. 2912 Operational Energy Savings*



2025DON - 0603724N - 3270

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 3270 / *Sec. 2912 Operational Energy Savings*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3270				
Sec 2912 Operational Energy: Operational Energy	3	2023	4	2023
Sec 2912 Operational Energy: UAS Persistence - Mission Effectiveness Modeling	3	2023	4	2024
Sec 2912 Operational Energy: Common UAS Group 1/2 Battery Architecture	3	2023	4	2024
Sec 2912 Operational Energy: UxS Power and Energy Modeling Capability in STORM	3	2023	4	2023
Sec 2912 Operational Energy: Theatre Energy Authoritative Data - Model	3	2023	4	2023
Sec 2912 Operational Energy: Contested Logistics Capability Support	3	2023	4	2023
Sec 2912 Operational Energy: Autonomous Robotic Refueling	3	2023	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*				Project (Number/Name) 9999 / *Congressional Adds*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
9999: *Congressional Adds*	151.199	14.477	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	165.676
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

C545 belongs to BSO52
C875 belongs to BSO24

A. Mission Description and Budget Item Justification

FY2023 Congressional Add ($10.000M) for C545 - Marine System Sensors Microgrids (BSO 52)
FY2023 Congressional Add ($5.000M) for C875 - Navy Energy Systems

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024
Congressional Add: Marine energy systems for sensors and microgrids ***FY 2023 Accomplishments:*** Marine energy systems for sensors and microgrids ***FY 2024 Plans:*** N/A	9.654	0.000
Congressional Add: Navy energy systems ***FY 2023 Accomplishments:*** Navy energy systems development. ***FY 2024 Plans:*** N/A	4.823	0.000
Congressional Adds Subtotals	14.477	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

RDTEN Contracts are Competitive Procurements

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 9999 / *Congressional Adds*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year Congressional Adds	Various	Various : Various	71.585	0.000		0.000		0.000		-		0.000	0.000	71.585	-
Battery Development and Safety Enterprise	TBD	TBD : TBD	28.319	0.000		0.000		0.000		-		0.000	0.000	28.319	-
C492 - Natural Gas Technologies	Various	EXWC : Port Hueneme, CA	7.500	0.000		0.000		0.000		-		0.000	0.000	7.500	-
C671 - System Sensors Microgrids	Various	EXWC : Port Hueneme, CA	10.500	0.000		0.000		0.000		-		0.000	0.000	10.500	-
C758 - Navy Energy Program	Various	TBD : TBD	7.116	0.000		0.000		0.000		-		0.000	0.000	7.116	-
C782-Cargo Family Drone Battery	WR	NAWC/AD : Pax River, MD	1.500	0.000		0.000		0.000		-		0.000	0.000	1.500	-
C545 - Marine Energy Converters	Various	TBD : TBD	10.136	9.654	Aug 2023	0.000		0.000		-		0.000	0.000	19.790	-
C782-Cargo Family Drone Battery	SS/BA	Packet Digital : ND	7.188	0.000		0.000		0.000		-		0.000	0.000	7.188	-
C758 - Navy Energy Program H2 Stalker Increment	Various	Various : Various	2.625	0.000		0.000		0.000		-		0.000	0.000	2.625	-
C758- Navy Energy Program CH-53K Hybrid Inlet	Various	various : various	2.600	0.000		0.000		0.000		-		0.000	0.000	2.600	-
C758 - Navy Energy Program Improved Lith. Battery SOC,SOH	Various	various : various	0.260	0.000		0.000		0.000		-		0.000	0.000	0.260	-
C758 - Navy Energy Program Drouge Stabilization	Various	various : various	1.870	0.000		0.000		0.000		-		0.000	0.000	1.870	-
C875 Navy Energy Systems	Various	various : varous	0.000	4.823	Sep 2024	0.000		0.000		-		0.000	0.000	4.823	-
		Subtotal	151.199	14.477		0.000		0.000		-		0.000	0.000	165.676	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603724N / *Navy Energy Program*	Project (Number/Name) 9999 / *Congressional Adds*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	151.199	14.477		0.000		0.000		-		0.000	0.000	165.676	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 9999 / *Congressional Adds*

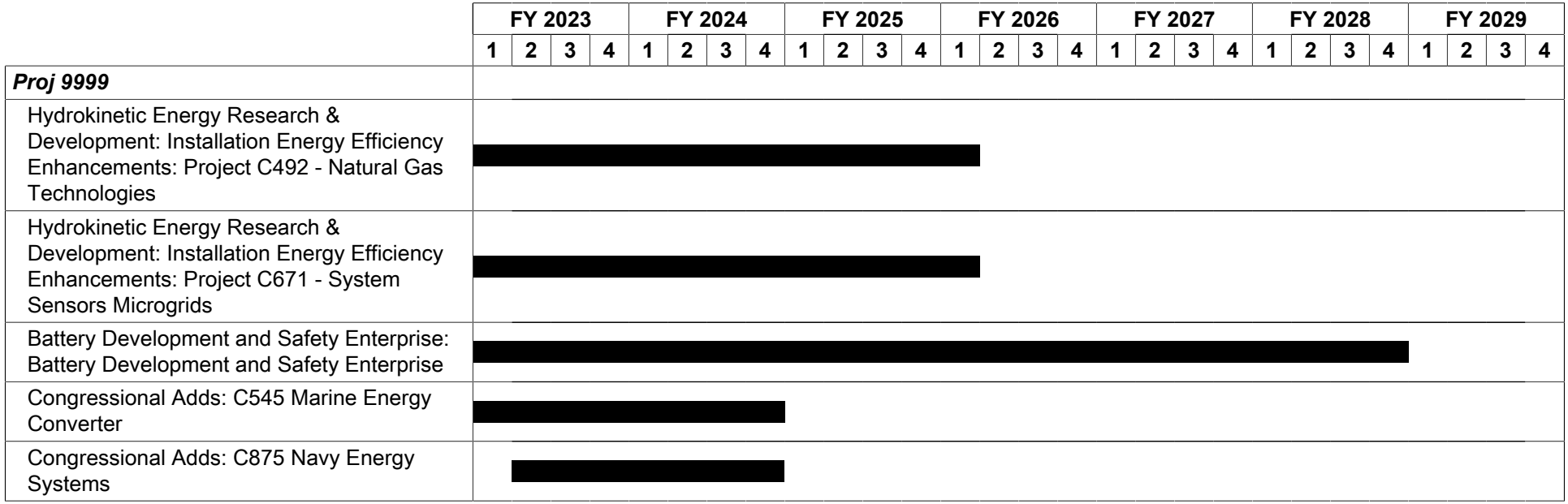


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603724N / *Navy Energy Program*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9999				
Hydrokinetic Energy Research & Development: Installation Energy Efficiency Enhancements: Project C492 - Natural Gas Technologies	1	2023	1	2026
Hydrokinetic Energy Research & Development: Installation Energy Efficiency Enhancements: Project C671 - System Sensors Microgrids	1	2023	1	2026
Battery Development and Safety Enterprise: Battery Development and Safety Enterprise	1	2023	4	2028
Congressional Adds: C545 Marine Energy Converter	1	2023	4	2024
Congressional Adds: C875 Navy Energy Systems	2	2023	4	2024